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(§371 of International Application PCT/JP03/16734)

IN THE CLAIMS:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Claims 3-9 have been amended and claims 10-20 have been added as follows:

Listing of Claims:

Claim 1 (original): A gas-liquid separator for gas-liquid separation performed by centrifugal force of an impeller mounted on a shaft which rotates in a casing comprising:

a discharge impeller part providing discharge force to the passing fluid formed on an axial end of the impeller; a discharge outlet of the casing disposed in a position opposite the discharge impeller part;

the other axial end of the impeller being formed to slide on the inner wall of the casing; an exhaust outlet of the casing disposed in a position opposite the sliding impeller part; vacuum means connected to the exhaust outlet; and

a suction inlet of the casing disposed in a position between the discharge outlet and the exhaust outlet.

Claim 2 (original): The gas-liquid separator according to claim 1, wherein a cleaning fluid inlet is provided near the shaft sealing of the casing where the rotating shaft penetrates.

Claim 3 (currently amended): The gas-liquid separator according to claim 1 ~~or claim 2~~, wherein the inlet to the casing is formed to a flow path that winds up inside the casing.

Claim 4 (currently amended): The gas-liquid separator according to ~~any one of claims 1 to 3~~ claim 2, wherein the impeller is provided with a baffle member which prevents the direct penetration of liquid near the rotating shaft to the exhaust outlet inlet to the casing is formed to a flow path that winds up inside the casing.

Claim 5 (currently amended): The gas-liquid separator according to ~~any one of claims 1 to 4~~, wherein the impeller is provided with at least one cylindrical member coaxially attached to the impeller claim 1, wherein the impeller is provided with a baffle member which prevents the direct penetration of liquid near the rotating shaft to the exhaust outlet.

Claim 6 (currently amended): The gas-liquid separator according to ~~any one of claims 1 to 5~~, wherein at least one of fluid throttle means, heating means, and accumulation means is inserted in the passage of the suction inlet claim 2, wherein the impeller is provided with a baffle member which prevents the direct penetration of liquid near the rotating shaft to the exhaust outlet.

Claim 7 (currently amended): The gas-liquid separator according to ~~any one of claims 1 to 6~~, wherein cavitation-causing means is inserted in the passage for gas-liquid separation claim 1, wherein the impeller is provided with at least one cylindrical member coaxially attached to the impeller.

Claim 8 (currently amended): The gas-liquid separator according to ~~any one of claims 1 to 7~~, wherein protection means, which allows gas passage but prevents liquid passage, is inserted in the exhaust passage from the exhaust outlet to the vacuum means claim 2, wherein the impeller is provided with at least one cylindrical member coaxially attached to the impeller.

Claim 9 (currently amended): The gas-liquid separator according to ~~any one of claims 1 to 8, wherein at least a portion of the discharged fluid from the discharge outlet is returned to the suction inlet~~ claim 1, wherein at least one of fluid throttle means, heating means, and accumulation means is inserted in the passage of the suction inlet.

Claim 10 (new): The gas-liquid separator according to claim 2, wherein at least one of fluid throttle means, heating means, and accumulation means is inserted in the passage of the suction inlet.

Claim 11 (new): The gas-liquid separator according to claim 7, wherein at least one of fluid throttle means, heating means, and accumulation means is inserted in the passage of the suction inlet.

Claim 12 (new): The gas-liquid separator according to claim 1, wherein cavitation causing means is inserted in the passage for gas-liquid separation.

Claim 13 (new): The gas-liquid separator according to claim 2, wherein cavitation causing means is inserted in the passage for gas-liquid separation.

Claim 14 (new): The gas-liquid separator according to claim 7, wherein cavitation causing means is inserted in the passage for gas-liquid separation.

Claim 15 (new): The gas-liquid separator according to claim 1, wherein protection means, which allows gas passage but prevents liquid passage, is inserted in the exhaust passage from the exhaust outlet to the vacuum means.

Claim 16 (new): The gas- liquid separator according to claim 2, wherein protection means, which allows gas passage but prevents liquid passage, is inserted in the exhaust passage from the exhaust outlet to the vacuum means.

Claim 17 (new): The gas-liquid separator according to claim 7, wherein protection means, which allows gas passage but prevents liquid passage, is inserted in the exhaust passage from the exhaust outlet to the vacuum means.

Claim 18 (new): The gas-liquid separator according to claim 1, wherein at least a portion of the discharged fluid from the discharge outlet is returned to the suction inlet.

Claim 19 (new): The gas-liquid separator according to claim 2, wherein at least a portion of the discharged fluid from the discharge outlet is returned to the suction inlet.

Claim 20 (new): The gas-liquid separator according to claim 7, wherein at least a portion of the discharged fluid from the discharge outlet is returned to the suction inlet.